UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

Dicerna Pharmaceuticals, Inc., Plaintiff, v. Alnylam Pharmaceuticals, Inc., Defendant.	)	Civil Action No. _____

DICERNA PHARMACEUTICALS, INC.'S COMPLAINT AGAINST ALNYLAM PHARMACEUTICALS, INC.

Plaintiff Dicerna Pharmaceuticals, Inc. ("Dicerna") by and through its undersigned counsel, upon personal knowledge as to its own acts and on information and belief as to all others, asserts the following claim against defendant Alnylam Pharmaceuticals, Inc. ("Alnylam"):

1. Dicerna asserts this claim against Alnylam to obtain injunctive relief and recover damages arising from antitrust violations of the Sherman Act, 15 U.S.C. § 2.

2. Specifically, Alnylam has undertaken a calculated scheme, grounded in bad faith, designed to thwart Dicerna's competitive business activities and illegally obtain for itself market dominance that it may exploit to deny therapeutic choice and a necessary medical treatment option to chronically-ill patients suffering from a debilitating and fatal genetic disease, and to deny many such patients any treatment at all, in order to reap monopoly profits.

PARTIES

3. Dicerna is a corporation organized and existing under the laws of Delaware with a principle place of business in Cambridge, Massachusetts. Dicerna is a biopharmaceutical

research company with a focus on discovery and development of innovative therapies to stop or turn off destructive disease processes by silencing genes underlying these processes. Dicerna has an extensive history of innovation in the area of RNA interference ("RNAi"), a biologic process used in the development of specific and powerful therapies to treat rare diseases, chronic liver diseases, cardiovascular disease, and viral liver infectious diseases.

4. Alnylam is a corporation organized and existing under the laws of Delaware with a principle place of business in Cambridge, Massachusetts. Alnylam also develops RNAi therapies to treat rare diseases.

5. As a result of their research into the same scientific area, Dicerna and Alnylam compete to hire the same scientists, and they also compete for the same investment dollars and partnerships with other pharmaceutical companies. Dicerna and Alnylam also compete in the efforts to develop pharmaceutical therapies to treat particular diseases.

6. One of the most significant threats to Alnylam's business is competition. Alnylam's 2017 Annual Report states that "If these companies develop drugs more rapidly than we do or their technologies, including delivery technologies, are more effective, our ability to successfully commercialize drugs may be adversely affected." Alnylam ended the first quarter of 2017 with over one billion dollars cash on hand; Dicerna, by comparison, has only a small fraction of that amount. As the best-funded company in the RNAi space, Alnylam has a significant motivation to monitor and, if possible, disrupt its competitor's research. As set forth more fully below, Alnylam's chosen method of disrupting Dicerna's research was to fire off a baseless lawsuit in an effort to put a cloud over and artificially impede Dicerna's competitive developments.

NATURE OF THE ACTION

7. Alnylam is purposefully undermining its only competition in the market for the development of RNAi-based treatment for Primary Hyperoxaluria Type 1 ("PH1"), and its efforts effectively will block development of the only treatment in development for Primary Hyperoxaluria Type 2 ("PH2") and Primary Hyperoxaluria Type 3 ("PH3", and collectively with PH1 and PH2, "PH"), through prosecution of sham litigation and public announcements falsely alleging Dicerna misappropriated Alnylam trade secrets, in order to impede Dicerna's ability to effectively partner with other pharmaceutical companies in research and development projects, raise financing or investment monies necessary to pursue its own developments and otherwise effectively compete with Alnylam, and despite having no good faith basis to allege that Dicerna has used any Alnylam confidential or proprietary information. In doing so, Alnylam is violating federal antitrust laws. Alnylam has injured competition, and Dicerna asserts this claim to recover damages and enjoin Alnylam's continuing abuses, so that a competitive market for the development of potentially life-saving drugs may be preserved.

8. PH1, PH2, and PH3 are rare disorders of metabolism that can result in severe kidney damage, requiring kidney transplant and/or other major surgical procedures, and potentially more widespread damage to bodily organ systems. There are no approved pharmaceutical therapies for PH, leaving frequent renal dialysis as palliative care and combined liver/kidney transplant as the only potentially curative option.

9. It takes several years and significant research and resources to develop an approved medical treatment for PH. Dicerna and Alnylam are the only companies publicly identified as developing proprietary RNAi-based treatments for PH1. Dicerna alone is developing a treatment that will address all PH; Alnylam's treatment will not address PH2 or PH3.

10. On June 10, 2015, Alnylam instituted litigation in the Commonwealth of Massachusetts, Middlesex Superior Court, against Dicerna. In that litigation, Alnylam alleges that the impetus for its filing of the action was that "Dicerna announced that it had, for the first time, developed clinically and potentially commercially viable conjugates and siRNA delivery technologies." *Alnylam v. Dicerna*, Civil Action No. 15-cv-4126 (the "State Court Litigation"), Compl. at ¶ 6.

11. As described below, Alnylam's sham litigation and bad faith public disclosure of unsupported allegations attacking the integrity and validity of Dicerna's research and development of a competing therapy constitute bad faith attempts by Alnylam to block Dicerna's development of RNAi-based treatment for PH. Alnylam is pursuing these bad faith competitive tactics and sham litigation as a means to prevent Dicerna from developing RNAi-based treatment by draining Dicerna's resources, and frustrating Dicerna's ability to attract the investment dollars and partnerships with other pharmaceutical companies in this area of treatment that are necessary to remain a viable and active competitor for the development of RNAi-based treatment for PH1. As Dicerna is Alnylam's only viable and active competitor for the developments of RNAi-based treatment for PH, Alnylam's misconduct, if unchecked, threatens to monopolize the PH1 treatment market and will effectively block the development of the only treatment option being developed for PH2 and PH3.

JURISDICTION, VENUE AND COMMERCE

12. The Court has jurisdiction over this Action pursuant to Section 4 of the Sherman Act, 15 U.S.C. § 4, and 28 U.S.C. §§ 1331, 1337.

13. The conduct alleged herein has affected and will continue to affect a substantial volume of interstate commerce, including commerce in this District.

14. Venue is proper in this District under Section 12 of the Clayton Act, 15 U.S.C. § 22, and under 28 U.S.C. § 1391. Alnylam resides in, transacts business in, and has a principle business office found within, this District.

THE STRUCTURE OF THE MARKET FOR THE DEVELOPMENT OF RNAi-BASED TREATMENTS FOR PH

A. PRIMARY HYPEROXALURIA DISORDER

15. PH is a rare inborn error of metabolism. In PH patients, the liver produces excessive levels of a small molecule called oxalate, which accumulates in urine. The excess oxalate combines with calcium in urine, thus forming the main component of kidney and bladder stones (calcium oxalate). The deposition of calcium oxalate leads to destruction of the kidneys.

16. Increasingly compromised kidney function during the progression of PH disease results in subsequent accumulation of calcium oxalate crystal deposition in bones, eyes, skin, heart, and the central nervous system, leading to severe illness and death. About 50 percent of patients suffering with PH1 will have kidney failure, known as end-stage renal disease, by age 30, necessitating intensive dialysis and the need for kidney transplant.

17. There are no approved pharmaceutical therapies for the treatment of PH. Current treatment options are very limited, and include frequent renal dialysis, high fluid intake, vitamin B6, potassium citrate, diet, and monitoring as palliative care. Combined organ transplantation of liver and kidneys as the only potentially curative option, although these surgeries bring potentially grave risks of their own.

B. RNAi-BASED TREATMENTS FOR PH

18. Dicerna has been actively researching RNAi conjugate delivery technology since as early as 2009, making developments in that technology that are wholly independent of, and different from, RNAi-based technology developments by Alnylam and Merck & Co. (“Merck”).

19. Among other RNAi-based technology developments, Dicerna has developed GalXC, a propriety technology platform that advances the development of next-generation RNAi-based therapies designed to silence disease-driving genes in the liver. Compounds produced via GalXC are intended to be broadly applicable across multiple therapeutic areas, including rare diseases such as PH. Dicerna filed initial patent applications covering the essential structure of its GalXC technology beginning in 2008.

20. Utilizing its GalXC platform technology, Dicerna is developing DCR-PHXC for the treatment of PH, including PH1, PH2 and PH3. DCR-PHXC is in preclinical development, and has advanced into Investigational New Drug ("IND") enabling studies. In preclinical models of PH, DCR-PHXC reduces oxalate production to near-normal levels, ameliorating the disease condition. Dicerna plans to file an IND submission and/or Clinical Trial Application ("CTA") for DCR-PHXC in late 2017 and commence human clinical trials shortly thereafter.

21. To facilitate DCR-PHXC development, Dicerna developed a Primary Hyperoxaluria Observational Study ("PHYOS"), an international, multicenter, observational study in patients with a genetically confirmed diagnosis of PH. PHYOS is collecting data on key biochemical parameters implicated in the pathogenesis of PH. The data generated by PHYOS will help guide long-term drug development plans.

22. Alnylam also is developing its own RNAi-based treatment for PH1, which it calls ALN-GO1. Unlike Dicerna's technology, Alnylam's treatment will not address PH2 or PH3.

23. Dicerna is the only competitor of, and therefore the only company that poses a business threat to, Alnylam in the market for RNAi-based treatment for PH. No other firms have publicly announced that they are developing a RNAi-based treatment for PH and Dicerna is the

only company that has publicly announced it is developing an RNAi-based treatment for PH2 or PH3.

24. Other approaches to finding a treatment for PH are not substitutes for RNAi-based treatment, because only RNAi-based treatment for PH is capable of addressing the underlying cause of PH, which is the over-production of the harmful chemical oxalate in the liver of patients with PH. Other pharmaceutical treatments being pursued would, if successfully developed, address the chemical oxalate after it has been produced, but will leave untreated the underlying cause of that condition.

C. ALNYLAM FILED SHAM LITIGATION TO IMPAIR DICERNA'S ABILITY TO COMPETE IN THE DEVELOPMENT OF PH TREATMENTS

25. Dicerna and Alnylam have each developed distinct technologies to utilize the natural biological process of RNAi with the goal of developing therapies to suppress the expression of disease-involved genes. This field of study has been known since at least 1998.

26. In March 2014, Alnylam purchased all the outstanding shares of common stock of Sirna, a wholly-owned subsidiary of Merck, which held Merck's RNAi-related assets for the purpose of the transaction. Alnylam did not purchase Merck's RNAi-related operations as a going concern; it did not acquire all employee contracts, its research facilities, developed processes or clinical-stage assets as part of the transaction.

27. In the fall of 2013, after Merck decided to sell its RNAi assets, it terminated the employment of dozens of RNAi scientists and reassigned the remainder.

28. Starting with Dicerna's Series C financing round and continuing through its successful IPO in January 2014, Dicerna experienced an influx of cash, totaling $150 million, that allowed it to significantly expand the number, breadth, and depth of activities of its staff of

researchers. As part of its growth plans Dicerna interviewed 35 scientists, including 14 job applicants who had been terminated or reassigned by Merck.

29. Indeed, Merck management affirmatively encouraged Dicerna to hire certain of the terminated scientists, assisted those scientists in putting together presentations of their accomplishments at Merck to support their candidacies for positions outside of Merck, and actively supported their candidacies for employment with Dicerna. At no time in recommending the scientists did Merck management express any reservation to Dicerna about the confidentiality of Merck's information or the employees' obligations with respect thereto.

30. Ultimately, Dicerna hired eighteen new scientists, only six of whom were among the dozens of employees who had been terminated or reassigned by Merck in connection with the sale of its RNAi assets. Dicerna hired those six former Merck scientists over the course of five months through separate interviews and offers. The former Merck scientists were not hired as a group. None of the six former Merck scientists hired by Dicerna had non-competition agreements that would have prevented them from working for Dicerna, or any other RNAi competitor, after they were terminated by Merck.

31. Dicerna did not ask any former Merck scientist to take information from Merck and was unaware that any had done so. The first time Dicerna learned that any of the former Merck scientists may have taken any information when they left Merck was only after Dicerna received a demand letter from Alnylam in January of 2015.

32. On information and belief, all the terminated RNAi scientists had access to Merck's confidential information, but Merck failed to take any meaningful steps to prevent the departing scientists from leaving Merck with information in paper and/or electronic form, confidential or otherwise.

33. During the final months leading up to the sale of its RNAi program Merck allowed its terminated scientists to remove information without any effective check on their activities. As it shuttered its RNAi research division, Merck failed to take the reasonable and customary precautions of a modern biopharmaceutical company diligently protecting its trade secrets.

34. Merck failed to conduct comprehensive exit interviews of its departing scientists, failed to otherwise monitor or prevent the downloading of data from Merck computers in connection with the termination of its departing scientists, and failed to ensure that all copies of its internal documents or information were either destroyed or returned upon the departure of the employees.

35. Merck management affirmatively encouraged the terminated scientists to take slides and other information with them in order to support their applications for new employment by demonstrating their accomplishments and experience while working at Merck.

36. In the case of one scientist Dicerna later hired, Merck management expressly authorized him to take certain information. Merck gave this scientist broad discretion to take documents he believed to be relevant to his ongoing work in collaboration on publications with other scientists, some of whom remained at Merck and others of whom had already been terminated. Both Merck and Alnylam were aware that this former Merck scientist continued to work on these prospective publications and had access to Merck information relevant to the potential publications, while working at Dicerna. Indeed, even after Alnylam sent a January 26, 2015 letter to Dicerna demanding the return of alleged trade secrets, at least one Merck employee *continued* to send documents to that scientist with information relating to work he was doing on a manuscript they hoped to publish.

37. Merck not only failed to prevent the removal of information from its premises, it also failed to determine if departed scientists had removed any information when they left. On information and belief, based on the lack of communication with the former Merck scientists who came to be employed by Dicerna, the first time Merck took any affirmative step to investigate whether its former employees had accessed or otherwise removed information from Merck on their departure was in response to a subpoena issued in the State Court Litigation in May 2016, more than two years after the information allegedly left Merck.

38. Alnylam itself contends that one former Merck scientist, subsequently hired by Dicerna, rolled large quantities of information out of Merck over a period of several days in suitcases. No one at Merck stopped the obvious removal of the documents at that time, nor inspected them to determine what they contained.

39. In addition, Merck failed to implement any system that would have prevented employees from freely transferring documents from their Merck-issued computers to external storage devices even after it was obvious that departing scientists were taking documents with them. Because such controls were lacking, one Merck scientist, subsequently hired by Dicerna months after her termination from Merck, had backed up and downloaded Merck information onto a personal hard drive she used to store personal documents during her employment by Merck. She stored that hard drive at a family residence in Pennsylvania after she was terminated and she did not bring it to Dicerna, other than to provide it directly to Dicerna's counsel who then returned it to Merck. At no time did Merck independently seek the return of her back-up hard drive or ask her about its contents.

40. Because of its actions and its failures to take actions reasonably available and necessary to preserve confidentiality of its information, Merck failed to preserve the information Alnylam obtained in its acquisition of Sirna assets as trade secrets.

41. Alnylam could have easily determined what steps, if any, Merck took prior to closing to protect what Alnylam wishes to characterize as trade secrets acquired in its transaction.

42. In its acquisition of Sirna, Alnylam acquired dozens of Merck's and Sirna's issued and filed patent applications concerning RNAi technology. In its press release issued in connection with this acquisition, Alnylam described the patents it acquired in the transaction as a "core component" of Alnylam's patent estate which "broadly covers" the field of RNAi therapeutics. In electing to seek patent protection for their RNAi technology, Merck and Alnylam chose to forgo trade secret protection for the RNAi technology and to place the technology in the public domain through patent disclosures.

43. Neither Merck, nor Alnylam, has asserted a claim for breach of an employment agreement or NDA against any of the six former Merck scientists hired by Dicerna. Similarly, on information and belief based on the lack of publicly available information concerning any such lawsuit, Merck and Alnylam have not asserted any claim against any of the former Merck employees not hired by Dicerna for breach of an NDA or employment agreement arising out of the widespread disclosures at the time Merck was selling it RNAi assets.

44. For its own part, Alnylam itself failed to take appropriate measures in the transaction to protect information acquired from Merck as trade secrets. For example, Alnylam failed to offer the Merck scientists employment contracts or compensated non-competition agreements to protect the know-how it purchased from Merck. Alnylam took no steps to obtain

the return of information it now alleges that certain of the scientists hired by Dicerna removed from Merck, until sending a letter to Dicerna in January 2015. Alnylam's singular focus on Dicerna's competitive activities demonstrates the pretextual nature of its alleged concern for the secrecy of information that may have been taken from Merck by former employees.

45. The six former Merck scientists started working for Dicerna between January 2014 and May 2014.

46. On information and belief, Alnylam was aware that Dicerna had hired six scientists who were previously employed by Merck in its RNAi program. Alnylam made no objection to Dicerna's hiring of these scientists at the time they began employment at Dicerna and did not communicate any concern to the individual scientists that their new employment implicated in any way their nondisclosure obligations.

47. Each of the eighteen scientists Dicerna hired around the time of its IPO was a highly-qualified scientist knowledgeable in chemistry or molecular biology. Each was free to (and did) contribute his or her general skill, knowledge and training to Dicerna's therapeutic development.

48. In November 2014, Dicerna posted a "Company Overview" presentation on its website indicating that it was conducting research on siRNA conjugates.

49. The November 2014 presentation included the so-called "Slide 11" - a schematic drawing of two conjugated siRNA structures.

50. After seeing the "Slide 11" schematic, Alnylam considered Dicerna to be a significant competitive threat, and embarked on a scheme to disrupt Dicerna's competitive development.

51. For the first time since Dicerna hired the former Merck scientists, Alnylam purported to be concerned about the information that it alleges was removed from Merck in 2013. Specifically, on January 26, 2015, months after Dicerna published Slide 11, Alnylam's outside counsel sent a letter to Dicerna regarding the use of any Merck information retained by the former Merck scientists now working for Dicerna. In that letter, the sole basis cited for Alnylam's alleged belief that alleged Merck trade secret information had been used by Dicerna was "In light of the information contained in at least slide 11 of that presentation."

52. In fact, the figures shown on Slide 11 do not show any Merck or Alnylam "trade secret" information. The "tetra loop" structure depicted in Slide 11 had been developed independently by Dicerna and disclosed in a patent application first filed in 2008. See Dicerna's U.S. Patent Application Publication No. US 2011/0003881.

53. GalNAc conjugation strategies in the RNAi field were well known and described in various public documents. For example, the conjugation reflected in the Slide 11 schematic, involving separate conjugation of individual GalNAc molecules and often referred to as "monovalent" GalNAc, had already been described in numerous scientific publications and even Alnylam had incorporated the monovalent GalNAc strategy as part of various public patent filings.

54. Alnylam was well aware of these public documents. For example, Alnylam's International Patent Application Publication No. WO 2010/039548, published in April 2010, discloses monovalent GalNAc conjugation at internal locations of siRNA, as do numerous prior public documents cited in the Application. After prosecuting the corresponding U.S. National Phase application, Alnylam obtained the grant of U.S. Patent No. 8,962,580, which claims certain siRNA molecules having GalNAc conjugation at internal locations. In a continuation

application, in March 2015, just three months before commencing the State Court Litigation, Alnylam submitted claims to the U.S. Patent and Trademark Office directed to certain siRNA molecules having monovalent GalNAc conjugation at multiple positions (located close to ends of the molecule). See U.S. Patent Application No. US 14/587,957, preliminary Amendment, filed March 27, 2015, claims 1, 29-32. This Patent Application also includes citations to numerous prior public documents that disclose monovalent GalNAc. Similarly, Sirna's International Patent Application Publication No. WO 2011/090968, published in July 2011 (when Sirna was still owned by Merck), also disclosed monovalent GalNAc conjugation at multiple internal positions, and includes citations to numerous prior public documents that disclose monovalent GalNAc. Further, Alnylam, as well as Sirna and other research groups have disclosed the idea of conjugating monovalent GalNAc to internal positions in numerous additional patent and research publications. See, e.g., Matulic-Adamic *et al*. *Bioconjugate Chem.* 13: 1071-1078 (2002); Sirna's U.S. Patent Application Publication No. US 2004/0249178; Yamada *et al*. *J. Org. Chem.* 76:1198–1211 (2011), and the references cited therein.

55. Despite its ongoing pursuit of patents on GalNAc conjugation, and its awareness of the body of public knowledge concerning GalNAc conjugation, in June 2015 Alnylam commenced the State Court Litigation, claiming that Dicerna's Slide 11 reflected the use of Alnylam's trade secrets. Alnylam's willful blindness to the public domain and its own patent disclosures reveals that Alnylam had no concern regarding the inaccuracy of its "trade secret" allegation. Alnylam has pursued the State Court Litigation for the purpose of the competitive harm it will inflict on Dicerna, at best without even bothering to confirm that the alleged "trade secret" information was not publicly disclosed. At worst, Alnylam knew its allegation was false and pursued the State Court Litigation anyway.

56. In multiple correspondence prior to the filing of the State Court Litigation, including February 9, 2015, April 6, 2015, April 10, 2015, April 22, 2015, May 29, 2015, June 3, 2015, June 4, 2015, and June 8, 2015, Dicerna requested clarification of Alnylam's claims regarding "Slide 11." As Dicerna and its counsel repeatedly emphasized to Alnylam, the schematic on "Slide 11" was not secret, the structure it depicted was not secret, and the technology required to develop the structure was not secret.

57. In response to Dicerna's requests for clarification, Alnylam's counsel first stated that "the Galnac (sic) conjugate structure depicted on slide 11" was an Alnylam-owned trade secret. Later, he stated that "Slide 11 . . . quite explicitly discloses a proprietary structure developed at Sirna." These conclusory statements had no basis in fact and were not grounded in any good faith belief that the information in Slide 11 was not in the public domain.

58. Alnylam alleges that the former Merck scientists took trade secret and confidential information from Merck before they were hired by Dicerna. Alnylam has not and cannot allege that Dicerna was involved in or even knew of the alleged misappropriation. Nevertheless, on information and belief, Alnylam has taken no action against any former Merck scientist, whether employed at Dicerna or elsewhere. It sent a cease and desist letter to and filed suit against only its competitor, Dicerna.

59. Dicerna retained outside counsel to respond to Alnylam and obtain clarification of Alnylam's allegations, even though the former Merck scientists were not employed at Dicerna when they were alleged to have removed materials from Merck.

60. On June 3, 2015, Dicerna's outside counsel sent Alnylam's counsel electronic copies of Merck documents Dicerna's counsel had collected from the former Merck scientists now employed at Dicerna.

61. Dicerna's counsel also met with and reported to Alnylam's counsel that the documents (a) had not been used; (b) were taken in some instances with express Merck permission; and (c) were unrelated in many instances to the technology Alnylam was concerned about. Dicerna's counsel offered to have the Merck documents destroyed and sought Alnylam's agreement with respect to a procedure for doing so.

62. On June 8, 2015, Dicerna's counsel wrote to Alnylam's' counsel again to seek clarification of Alnylam's allegations. Dicerna's June 8, 2015 letter again sought agreement with respect to a procedure by which Dicerna's counsel could delete the documents it had sent to Alnylam.

63. Alnylam's response, just two days later on June 10, 2015, was to initiate the State Court Litigation by filing a Complaint against Dicerna. The Complaint seeks unspecified damages against Dicerna for an alleged misappropriation of unspecified trade secrets. Alnylam's Complaint purports to seek a permanent injunction against Dicerna's further use of any allegedly secret information, but even though its Complaint was filed more than six months after Alnylam allegedly suspected that Dicerna had misappropriated its trade secrets, Alnylam did not seek (and to this day has not sought) any preliminary relief to prevent the alleged continued misuse of any trade secret, or an expedited schedule. In this way, Alnylam was able to publicly impugn all of Dicerna's competitive developments and technologies and cast them under an ominous, but undefined, cloud as potentially violating Alnylam's alleged trade secrets, while consciously avoiding putting its allegations to any test on the merits for as long as the State Court Litigation can be made to drag on.

64. In order to qualify for trade secret protection under Massachusetts law, the owner of an alleged trade secret must protect the secrecy of such information by guarding against its

public disclosure, limiting access to the information both without and within the company, and otherwise exercise eternal vigilance to avoid the publication of the trade secret. In this case, such measures were not taken to guard the alleged trade secrets, and indeed Merck and Alnylam affirmatively chose to disclose many of the alleged "trade secrets" to the public through patent applications, publications, conference presentations, and other public disclosures. As a result, Alnylam's alleged "trade secrets" claimed in its lawsuit do not qualify for trade secret protection.

65. Without identifying in good faith any qualifying trade secret allegedly infringed and without meaningfully considering whether any information in Dicerna's possession constituted a trade secret, as opposed to information already in the public domain, Alnylam launched and publicly touted a purposefully overbroad and conclusory complaint designed to materially impair its much smaller competitor's ability to effectively develop its competitive technology.

66. Because they are competitors, Alnylam is well-aware that Dicerna relies on securing partnerships, alliances, and licensing deals with other pharmaceutical companies to continue to fund its mission of continuing research and development into potentially life-saving therapeutics.

67. Alnylam is also well-aware that threatening, filing, and continuing litigation against Dicerna would have a severe chilling effect on Dicerna's ability to secure partnerships, alliances, or licensing deals.

68. Alnylam's Complaint in the State Court Litigation perpetuates Alnylam's false assertion based on the "Slide 11" schematic that Dicerna could not have made the scientific advances but for the use of information retained by Merck's former employees. Based on

Alnylam's own development of GalNAc conjugate technology prior to its acquisition of alleged trade secrets from Merck, Alnylam must have known that allegation was not true.

69. The same day Alnylam commenced the State Court Litigation, it issued a press release announcing its action. With the press release, Alnylam also posted an electronic copy of its Complaint in the State Court Litigation to its website, where it remains accessible today. The press release included a quotation of Alnylam's President and Chief Operating Officer suggesting, falsely, that Dicerna had refused to cooperate with Alnylam's requests to investigate Alnylam's accusation of theft of trade secrets.

70. While the press release claims that by its suit "Alnylam seeks to stop misappropriation by Dicerna of the company's confidential, proprietary, and trade secret information related to, among other things, GalNAc conjugate technology," in fact, Alnylam sought no preliminary relief with the filing of the State Court Litigation whatsoever. In fact, Alnylam has not submitted a motion seeking any preliminary relief in the State Court Litigation, nor has it made any other attempt to enjoin Dicerna's continuing alleged use of so-called trade secrets, in the two years since it filed the State Court Litigation. Instead, Alnylam has sought repeated delays to the case schedule and permitted the State Court Litigation to linger in order to maximize its chilling effect on Dicerna's competitive developments.

71. Because the Complaint in the State Court Litigation contains no meaningful specifics concerning the allegedly misappropriated trade secrets and because the pleadings that would contain relevant information are under seal, there is no way for a third party to make a meaningful, independent, evaluation of the merits (or lack thereof) of Alnylam's unspecified claims. As a result, Alnylam has been able to cast a cloud over Dicerna merely by publicizing and posting its State Court Litigation Complaint falsely asserting that Dicerna misappropriated

its trade secrets. This cloud has damaged, and will continue to damage, Dicerna and has impeded its ability to timely enter the market with a pharmaceutical treatment for PH, regardless of the outcome of litigation after trial.

72. Because of the cloud of uncertainty cast by Alnylam's prolonged sham litigation, Dicerna has been unable to secure two partnership deals, which would have closed but for the pendency of the litigation. Both partners expressly refused to complete their respective deals as a result of the pendency of litigation.

73. At least one other potential partner has refused to start negotiations with Dicerna as a result of the litigation.

74. These lost partnerships have caused Dicerna direct pecuniary harm in the form of the lost or delayed investment dollars associated with the partnerships.

RELEVANT PRODUCT AND GEOGRAPHIC MARKET

75. The relevant product market is the market for the development of RNAi-based treatment for PH. At all material times, Dicerna and Alnylam have been, and remain, the only firms that have publicly announced the development of RNAi-based treatment for PH1. Dicerna and Alnylam are the only firms that have begun clinical trials of their respective RNAi-based treatment for PH1, and Dicerna and Alnylam are the only firms that will be in position to gain FDA approval for their respective treatments within the next several years.

76. There are no clinically approved pharmaceutical therapies for the treatment of PH, and other treatment approaches will not be interchangeable with RNAi-based treatments. To date, research efforts to discover small molecule drugs to treat PH1 have failed. Thus, RNAi-based treatments in development by Dicerna and Alnylam are the only treatments that are reasonably interchangeable for each other with regard to treatment of PH. From the view of patients with PH1, no other treatment will be an acceptable substitute.

77. The relevant geographic market is the United States.

78. If Dicerna cannot compete with Alnylam in the development of its RNAi-based treatment for PH, Alnylam will possess monopoly and market power in the market for the development of RNAi-based treatment of PH1 such that Alnylam will have the power to control prices and exclude competition, and PH2 and PH3 would remain untreatable disorders with no RNAi-based treatment being developed.

TRADE AND COMMERCE

79. During the relevant time period, and in connection with its development of RNAi-based treatment for PH1, Alnylam has transmitted monies as well as contracts, bills, and other forms of business communications in continuous and uninterrupted flow across state lines.

80. In order to effectuate its illegal attempt to monopolize the relevant market described above, Alnylam has utilized the United States mail, interstate travel, and electronic communications.

81. The activities of Alnylam as charged in this Complaint were within the flow of, have substantially affected, and will continue to substantially affect, interstate commerce.

HARM TO PATIENTS AND COMPETITION IN THE MARKET

82. Alnylam first discovered that Dicerna was developing clinically and potentially commercially viable conjugated siRNA delivery technology for the treatment of PH in November 2014. After making this discovery, Alnylam understood that Dicerna was a significant competitive threat and embarked on a scheme to disrupt Dicerna's competitive development.

83. By impeding Dicerna's competitive efforts, Alnylam will be able to monopolize the market for the development RNAi-based treatment of PH1. In the process, Alnylam will prevent the development of a treatment for PH2 and PH3, which currently have no treatment. As

set forth above, Alnylam is using sham litigation and bad faith public pronouncements of false allegations impugning Dicerna's proprietary competitive therapies to unlawfully attempt to impair and/or exclude its only competitor for the development of RNAi-based treatment of PH and thereby obtain a monopoly in the market.

84. Alnylam's efforts to monopolize the market for the development of RNAi-based treatment for PH come at a time when the market is in its infancy. For example, while there are no approved pharmaceutical therapies for the treatment of PH1 yet, the RNAi-based treatments currently in development at Dicerna and Alnylam are likely the only curative pharmaceutical treatments in line to become approved in the next decade. Dicerna projects annual sales of RNAi-based pharmaceutical treatments for PH1 in the United States totaling $28M by 2022 and $436M by 2036.

85. As a result of Alnylam's anticompetitive conduct and the high barriers to entry into this product market for other pharmaceutical companies, there is a dangerous probability that Alnylam will obtain a monopoly in the market for RNAi-based treatment for PH1 and block development of the only prospective treatment for PH2 and PH3 patients, if its anti-competitive conduct goes unchecked.

86. Alnylam's unlawful conduct has impaired competition and has had a direct, substantial and adverse effect on the market for the development of RNAi-based treatment for PH, artificially creating barriers to entry in the market and threatening to foreclose competition.

87. Alnylam is attempting to prevent its only competitor from developing a competing medically approved RNAi-based treatment for PH. Alnylam's anticompetitive conduct will result in higher prices paid by patients suffering from PH1 and reduced output of available treatment options for patients. Entry into the market for the development of RNAi-

based treatment for PH1 will be effectively foreclosed by Alnylam's disparagement campaign and sham litigation. At the same time, Alnylam's anticompetitive conduct will result in no RNAi-based treatment being developed for patients suffering from PH2 and PH3. The market for the development of RNAi-based treatment for PH2 and PH3 will be effectively foreclosed by Alnylam's disparagement campaign and sham litigation.

88. By attempting to foreclose and substantially impairing competition through its unlawful actions, Alnylam is threatening to prevent patients from purchasing lower-priced and more effective RNAi-based treatment and foreclosing patient access to a necessary treatment alternative.

89. Alnylam's illegal acts alleged herein, were authorized, ordered, or performed by Alnylam's officers, agents, employees, or representatives while actively engaged in the management of Alnylam's affairs.

HARM TO DICERNA

90. Alnylam's anticompetitive conduct has caused substantial harm and damage to Dicerna. Alnylam's sham litigation is impairing Dicerna's development of its DCR-PHXC treatment for patients suffering from PH1, PH2 and PH3.

91. Dicerna has been, and will be in the future, severely damaged through, *inter alia*, lost sales and profits, higher costs, and loss of good will, as a result of Alnylam's attempt to monopolize the market through sham litigation.

92. Alnylam's conduct is not consistent with a good faith belief that Dicerna is misusing proprietary Alnylam trade secret information. Rather, Alnylam's conduct is consistent only with an intention to embroil Dicerna in prolonged litigation over vague, unsupportable claims that Alnylam "owns" the entire field of RNAi for as long as possible at as high a cost as possible, in order to impede Dicerna's ability to develop its competing therapy.

FIRST CLAIM FOR RELIEF

Attempted Monopolization in Violation of Section 2 of the Sherman Act

93. Plaintiff Dicerna repeats and realleges all of the allegations in all of the paragraphs above as if set forth fully herein.

94. The U.S. market for the development of an RNAi-based pharmaceutical treatment for PH is a relevant antitrust market. Alnylam has willfully engaged, and is illegally engaging, in a cumulative course of conduct, including without limitation the sham pursuit of the State Court Litigation to eliminate its only competition in this market. Alnylam's actions have no legitimate business justification.

95. Alnylam has undertaken this course of conduct with the specific intent of monopolizing the market for the development of an RNAi-based pharmaceutical treatment for PH. There is a dangerous probability that, unless restrained, Alnylam's course of conduct will succeed, in obtaining a monopoly in the relevant market in violation of Section 2 of the Sherman Act, 15 U.S.C. § 2. The anti-competitive results, among others, will be: (a) Dicerna will be foreclosed from the relevant market; (b) patients suffering from PH1 will have reduced choices and pay higher prices; and (c) patients suffering from PH2 and PH3 will be deprived of necessary RNAi-based medical treatment altogether.

96. Dicerna has been injured in its business or property including through the frustration of Dicerna's investment in and pace of development of PH therapies, the loss of past, present, and future profits, by the loss of customers and potential customers, by the loss of goodwill and product image, and by the prospective impairment of its RNAi-based treatments for PH.

97. Dicerna has suffered irreparable injury by reason of the acts, practices and conduct of Alnylam alleged above, and will continue to suffer such injury until and unless the Court enjoins such acts, practices and conduct.

PRAYER FOR RELIEF

WHEREFORE, Dicerna requests that the Court:

98. Adjudge and decree that Alnylam has violated Section 2 of the Sherman Act, 15 U.S.C. § 15, through, among other means, the pursuit of sham litigation and bad faith public pronouncements falsely accusing Dicerna's development of competing RNA1-based PH treatment as violating Alnylam's trade secrets;

99. Enter judgment against Alnylam for treble the amount of Dicerna's damages as proven at trial in accordance with Section 4 of the Clayton Act, 15 U.S.C. § 15;

100. Enter further equitable relief as necessary or appropriate, including full restitution to Dicerna and/or disgorgement of all revenues, earnings, profits, compensation, and benefits that may have been obtained by Alnylam from Dicerna, its actual customers, and its potential customers as a result of such unfair business acts or practices;

101. Award Dicerna its costs and expenses of litigation, including attorneys' fees; and

102. Enter judgment against Alnylam for such other and further relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Dicerna hereby demands trial by jury in this action on all issues so triable.

Dated: August 8, 2017

DICERNA PHARMACEUTICALS, INC.

/s/ Steven M. Cowley
Michael R. Gottfried (BBO # 542156)
MRGottfried@duanemorris.com
Vincent L. Capuano (BBO # 5468517)
VCapuano@duanemorris.com
Steven M. Cowley (BBO # 554534)
SMCowley@duanemorris.com
DUANE MORRIS LLP
100 High Street, Suite 2400
Boston, MA 02110
Telephone: 857.488.4200